

We claim:

1. A method of wrapping a loadable object, comprising the steps of:

revolving film feeder means about a horizontal axis along a circular path while

5 advancing a loadable object past inside of said circular along a path extending in a direction of said horizontal axis from a first side towards a second side to cause film from said film feeder means to be wound spirally around the loadable object, thereby wrapping at least a portion or a major part of the loadable object;

thereafter rotating the loadable object in a horizontal plane by an angle of 90

10 degrees thereof; and

advancing the loadable object along said horizontal path from the second side towards the first side while revolving said film feeder means about said horizontal axis along said circular path to cause film from said film feeder means to be again wound spirally around said loadable object, thereby completing wrapping the
15 loadable object.

2. A method of wrapping a loadable object as set forth in claim 1, wherein

said film feeder means supplies a plurality of film at least one of which is a continuous strip of film and at least another of which is a continuous string of film
20 reformed by compressing from such a continuous strip of film whereby the loadable object is wound around and thereby wrapped with such at least one continuous strip and continuous string of film.

3. A method of wrapping a loadable object as set forth in claim 2, wherein

25 the loadable object is placed on a sleeve pallet means adapted to accept a fork of a forklift, and film from said feeder means is wound around both the loadable object and said sleeve pallet means.

4. A method of wrapping a loadable object as set forth in claim 1, wherein the loadable object is placed on a sleeve pallet means adapted to accept a fork of a forklift, and film from said feeder means is wound around both the loadable object and said sleeve pallet means.

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5. A method of wrapping a loadable object, comprising the steps of:
revolving film feeder means about a horizontal axis along a circular path while advancing a loadable object past inside of said circular along a path extending in a direction of said horizontal axis from a first side towards a second side to cause film
10 from said film feeder means to be wound spirally around the loadable object, thereby wrapping at least a portion or a major part of the loadable object;

thereafter rotating the loadable object in a vertical plane by an angle of 90 degrees thereof; and

advancing the loadable object along said horizontal path from the second side
15 towards the first side while revolving said film feeder means about said horizontal axis along said circular path to cause film from said film feeder means to be wound spirally again around said loadable object, thereby completing wrapping the loadable object.

20 6. A method of wrapping a loadable object as set forth in claim 5, wherein said film feeder means supplies a plurality of film at least one of which is a continuous strip of film and at least another of which is a continuous string of film reformed by compressing from such a continuous strip of film whereby the loadable object is wound around and thereby wrapped with such at least one continuous strip
25 and continuous string of film.

7. A method of wrapping a loadable object as set forth in claim 5, wherein the loadable object is placed on a sleeve pallet means adapted to accept a fork of a forklift, and film from said feeder means is wound around both the loadable object and said sleeve pallet means.

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8. An apparatus for wrapping a loadable object, comprising:

film feeder means adapted for revolving about a horizontal axis along a circular path;

bi-directional conveyer means adapted to carry and advance the loadable
10 object past inside of the circular path in a direction of said horizontal axis from a first side towards a second side and from the second side towards the first side,

whereby said film feeder means so revolving in conjunction with the loadable
object so advanced by said conveyer means from the first side towards the second
side causes film from the film feeder means to be wound spirally around the
15 loadable object, thereby wrapping at least a portion or a major part of the loadable
object; the apparatus further comprising:

carrier table means juxtaposed with said conveyer means in the second side
for receiving the loadable object having the continuous strip of film wound around it
and rotating the received loadable object in a horizontal plane by an angle of 90
20 degrees thereof and then returning the rotated loadable object onto said conveyer
means,

whereby said film feeder means revolving as aforesaid in conjunction with the
loadable object from said carrier table means advanced by said conveyer means as
aforesaid from the second side towards the first side causes film from said film
25 feeder means to be again wound spirally around the loadable object from said
carrier means, thereby completing wrapping the loadable object.

9. An apparatus for wrapping a loadable object as set forth in claim 8, wherein said film feeder means includes a plurality of film feeders, at least one of which includes in a film feed outlet thereof a squeeze roller means for squeezing a continuous strip of film so as to narrow its width and thereby to provide a continuous string of film, whereby said loadable object is wound around spirally and thereby wrapped with such continuous strip and continuous string of film.

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10 10. An apparatus for wrapping a loadable object, comprising:
film feeder means adapted for revolving about a horizontal axis along a circular path;

bi-directional conveyer means adapted to carry and advance the loadable object past inside of the circular path in a direction of said horizontal axis from a first side towards a second side and from the second side towards the first side,

15 whereby said film feeder means so revolving in conjunction with the loadable object so advanced by said conveyer means from the first side towards the second side causes film from the film feeder means to be wound spirally around the loadable object, thereby wrapping at least a portion or a major part of the loadable object; the apparatus further comprising:

20 carrier table means juxtaposed with said conveyer means in the second side for receiving the loadable object having the continuous strip of film wound around it and rotating the received loadable object in a vertical plane by an angle of 90 degrees thereof and then returning the rotated loadable object onto said conveyer means,

25 whereby said film feeder means revolving as aforesaid in conjunction with the loadable object from said carrier table means advanced by said conveyer means as aforesaid from the second side towards the first side causes film from said film

feeder means to be again wound spirally around the loadable object from said carrier means, thereby completing wrapping the loadable object.

11. An apparatus for wrapping a loadable object as set forth in claim 10,
5 wherein said film feeder means includes a plurality of film feeders, at least one of which includes in a film feed outlet thereof a squeeze roller means for squeezing a continuous strip of film so as to narrow its width and thereby to provide a continuous string of film, whereby said loadable object is wound around spirally and thereby wrapped with such continuous strip and continuous string of film.

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12. An apparatus for wrapping a loadable object, comprising:
film feeder means adapted for revolving about a horizontal axis along a circular path,
conveyer means adapted to carry and advance the loadable object past inside
15 of the circular path in a direction of said horizontal axis,
whereby said film feeder means so revolving in conjunction with the loadable object so advanced by said conveyer means causes film from the film feeder means to be wound spirally around the loadable object, thereby wrapping the loadable object,

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wherein said film feeder means comprises a plurality of film feeders, at least one of which includes in a film feed outlet thereof a squeeze roller means for squeezing a continuous strip of film being fed out so as to narrow its width and thereby to provide a continuous string of film, whereby said loadable object is wound spirally around and thereby wrapped with such continuous strip and continuous string
25 of film.

13. An apparatus for wrapping a loadable object, comprising:

a film wrapping machine having an inlet for receiving a loadable object from a loadable object feeder, said inlet having a press nozzle formed into a shape adapted to surround the loadable object from the loadable object feeder;

5 film feeder means adapted for revolving about a horizontal axis along a circular path defined in said film wrapping machine; and

conveyer means adapted to carry and advance the loadable object past inside of the circular path in a direction of said horizontal axis,

10 whereby said film feeder means so revolving in conjunction with the loadable object so advanced by said conveyer means causes film from the film feeder means to be wound spirally around the loadable object, thereby wrapping the loadable object.

14. An apparatus for wrapping a loadable object as set forth in claim 13,
15 wherein said wrapping machine is movable towards and away from said loadable object feeder.

15. An apparatus for wrapping a loadable object comprising:

a film wrapping machine;

20 film feeder means adapted for revolving about a horizontal axis along a circular path defined in said film wrapping machine;

conveyer means adapted to carry and advance a loadable object from a loadable object feeder past inside of the circular path in a direction of said horizontal axis from a first side to a second side,

25 whereby said film feeder means so revolving in conjunction with the loadable object so advanced by said conveyer means from the first side towards the second side causes film from the film feeder means to be wound spirally around the

loadable object about said horizontal axis, whereon said film feeder means ceases to be revolved; and

5 a rotary table disposed adjacent to said second side for advancing the loadable object in a direction of a vertical axis while rotating the loadable object about the vertical axis to cause film to be wound spirally about said vertical axis,

wherein said film feeder means comprises a plurality of film feeders at least one of which is positioned for film to be paid out therefrom oriented parallel to said horizontal axis and at least another of which is positioned for film to be paid out therefrom oriented parallel to said vertical axis.

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16. An apparatus for wrapping a loadable object as set forth on claim 15, wherein said film feeder means includes:

a film support shaft for carrying a roll of film;

15 an inlet and an outlet roll adapted to be driven to guide and pay out film from said roll of film carried by the film support shaft; and

a coupling mechanism interposed between said inlet and outlet rolls for establishing the relationship between them that the inlet roll rotates slower than the outlet roll rotates, said coupling mechanism being coupled to a shaft for said inlet roll and coupled via a centrifugal clutch to said outlet roll.

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17. An apparatus for wrapping a loadable object as set forth in claim 16, wherein said wrapping machine is movable towards and away from said loadable object feeder.

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18. An apparatus for wrapping a loadable object as set forth in claim 15, wherein said rotary table has a conveyer mounted thereon and adapted to move in a direction in which the conveyer conveys.

19. An apparatus for wrapping a loadable object as set forth in claim 18, wherein said wrapping machine is movable towards and away from said loadable object feeder.

5 20. An apparatus for wrapping a loadable object as set forth in claim 15, wherein said wrapping machine is movable towards and away from said loadable object feeder.

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